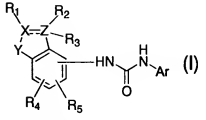
CLAIMS

1. A compound of Formula (I) and pharmaceutically acceptable salts thereof:

Formula (I)



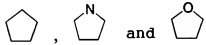
(I)

, wherein: Ar is a nitrogen-containing heteroaromatic ring group selected from a set of groups consisting of a pyridyl group, a pyrimidinyl group, a pyradinyl group, a pyridazinyl group, a thiazolyl group, an isothiazolyl group, an oxazolyl group, an isoxazolyl group, a pyrazolyl group, a pyrrolyl group, an imidazolyl group, an indolyl group, an isoindolyl group, a quinolyl group, an isoquinolyl group, a benzothiazolyl group, and a benzoxazolyl group, which:

1) may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower

alkylcarbamoyloxy group, a di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or groups represented by a formula Y_1-W_1-Y_2-R_p (wherein: R_p is any of a hydrogen atom, or a lower alkyl group, a lower alkenyl group or a lower alkynyl group which may be substituted with one to three of said substituent(s), or a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or

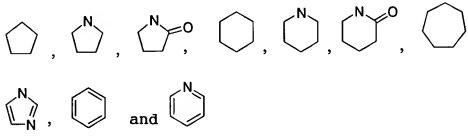
an aliphatic heterocyclic group selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, each of which cyclic group may be substituted with one to three of said substituent(s) or, furthermore, may have a bicyclic or tricyclic fused ring of a partial structure selected from a set of groups consisting of:



; W_1 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_q, SO_2NR_q, $N(R_q)SO_2NR_r$, $N(R_q)SO_2$, $CH(OR_q)$, $CONR_q$, $N(R_q)CO$, $N(R_q)CONR_r$, $N(R_q)COO$, $N(R_q)CSO$, $N(R_q)COS$, $C(R_q)=CR_r$, C≡C, CO, CS, OC(O), OC(O)NR_q, OC(S)NR_q, SC(O), SC(O)NR_q and C(O)O (wherein: R_q and R_r are each either a substituent selected from a set of groups consisting of (i) a hydrogen atom, (ii) a substituent selected from a set of groups consisting of a lower alkyl group, a cyclo lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, a lower alkoxy group, a lower

alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or (iii) a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s).); Y_1 and Y_2 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have any of said bicyclic or tricyclic fused ring);

2) may have a five- to seven-membered fused ring selected from a set of groups consisting of:

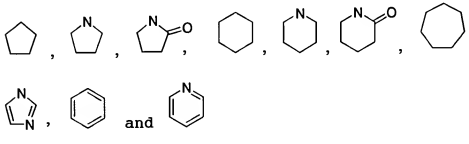


which may be formed together with the carbon atom of said nitrogen-containing heteroaromatic cyclic group, on which the substituent, which is selected from a set of groups

consisting of a lower alkyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, and a lower alkanoylamidino lower alkyl group (hereinafter indicated as ring-substituent) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent;

or,

3) may have a five- to seven-membered ring selected from a set of groups consisting of:



which may be formed together with the carbon atom of said

nitrogen-containing heteroaromatic group on which a substituent represented by the formula Y_1-W_1-Y_2-R_p (wherein: Y_1, W_1, Y_2 and R_p have the same meanings as stated above) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent.

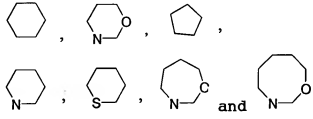
; X and Z are each, the same or different, a carbon atom or a nitrogen atom, or being taken together with R_1 or R_2 and/or R_3 which may exist on X or Z, form a CH or a nitrogen atom; Y is CO, SO or SO_2; R_1 is any of a hydrogen atom or a substituent represented by a formula Y_3-W_2-Y_4-R_s (wherein: R_s is any of a hydrogen atom or a lower alkyl group, a lower alkenyl group, a lower alkynyl group, a cyclo lower alkyl group, an aryl group, and a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or

an aliphatic heterocyclic group selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, all of which may be substituted with one to three of said substituent(s); W_2 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_t, SO_2NR_t, $N(R_t)SO_2NR_u$, $N(R_t)SO_2$, $CH(OR_t)$, $CONR_t$, $N(R_t)CO$, $N(R_t)CONR_u$, $N(R_t)COO$, $N(R_t)CSO$, $N(R_t)COS$, $C(R_v)=CR_r$, $C\equiv C$, CO, CS, $OC(O)$, $OC(O)NR_t$, $OC(S)NR_t$, $SC(O)$, $SC(O)NR_t$ and $C(O)O$ (wherein: R_t and R_u are each a hydrogen atom or a substituent selected from a set of groups consisting of a lower alkyl group, a hydroxy group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower

alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s)); Y_3 and Y_4 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group), or R_1 is an lower alkyl group which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl

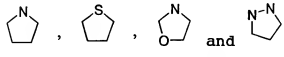
group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a substituent selected from groups represented by the formula Y_3-W_2-Y_4-R_8 (wherein: R_8, W_2, Y_3 and Y_4 have the same meanings as stated above), or R_1 forms a nitrogen atom together with X.); R_2 and R_3 are each independently, the same or different, a hydrogen atom, a hydroxy group, a lower alkyl group, a lower alkoxy group, or a substituent represented by the formula Y_3-W_2-Y_4-R_8 (wherein: R_8, W_2, Y_3 and Y_4 have the same meanings as stated above), or one of R_2 or R_3 forms, together with R_1 and X, a saturated five- to eight-membered cyclic group selected from sets of groups consisting of (a) and (b):

(a)



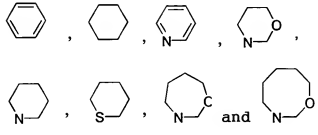
and

(b)

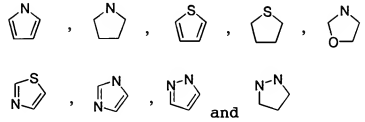


and another one of R_2 or R_3 binds to a carbon atom or a nitrogen atom on the ring, or to a carbon atom, an oxygen atom and/or nitrogen atom on said ring-substituent of said ring to form a five- to seven-membered ring, or R_2 and R_3 are combined to form a spiro cyclo lower alkyl group, or R_2 and R_3 are combined, together with Z on which they exist to form an oxo (keto, or carbonyl) group, or R_2 and R_3 form, together with Z, R_1 and X, on which they stand, a saturated or an unsaturated five- to eight membered cyclic group

which may be selected from sets of groups of (a) and (b):

(a)  and

and

(b)  and

, which may contain one or more kinds of hetero atom(s) selected from a group of a nitrogen atom, an oxygen atom and a sulfur atom, and which may be fused with any of a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl

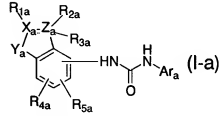
group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be substituted, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower

alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and a substituent selected from groups represented by the formula Y_1-W_1-Y_2-R_p (wherein: R_p, W_1, Y_1 and Y_2 have the same meanings as stated above); R_4 and R_5 are each, the same or different, a hydrogen atom, halogen atoms, a hydroxy group, an amino group, or a substituent represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or any of a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of the same or different substituent(s) selected from both a set of groups consisting of a lower alkyl group, a cyano group, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower

alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and groups represented by the formula Y_3-W_2-Y_4-R_5 (wherein: R_5, W_2, Y_3 and Y_4 have the same meanings as stated above); and the formula --- represents either a single bond or a double bond.

2. A compound according to claim 1, having a structure of Formula (I-a), and pharmaceutically acceptable salts thereof:

Formula (I-a)

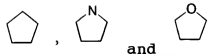


(I-a)

, wherein: Ar_a is a nitrogen-containing heteroaromatic ring group selected from a set of groups consisting of a pyridyl group, a pyrimidinyl group, a pyradinyl group, a pyridazinyl group, a thiazolyl group, a pyrazolyl group, and an imidazolyl group, and said nitrogen-containing heteroaromatic ring group

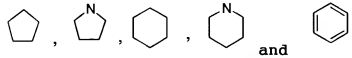
1') may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, halogen atoms, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a halo lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower

alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkylsulfonylamino group, or groups represented by a formula Y_{1a}-W_{1a}-Y_{2a}-R_{pa} (wherein: R_{pa} is any of a hydrogen atom or a lower alkyl group, a lower alkenyl group or a lower alkynyl group which may be substituted with one to three of said substituent(s), or a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an indolyl group, an ethylenedioxyphenyl group, a pyridyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinolyl group, a benzoimidazolyl group, a thiazolyl group, a thienyl group, and a triazolyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, a morpholino group, and a tetrahydroisoquinolinyl group, any of which cyclic groups may be substituted with one to three of said substituents, or, furthermore, may have a bicyclic or tricyclic fused ring which contains a partial structure selected from a set of groups consisting of:


and

; W_{1a} is an oxygen atom, a sulfur atom, NR_{qa}, SO_2NR_{qa}, $N(R_{qa})SO_2$, $CONR_{qa}$, $N(R_{qa})CO$, $N(R_{qa})COO$, $C(R_{qa})=CR_{ra}$, $OC(O)$, $OC(O)NR_{qa}$, or $C(O)O$ (wherein: R_{qa} and R_{ra} are each, a hydrogen atom or a substituent selected from a set of groups consisting of a lower alkyl group, a cyclo lower alkyl group, a hydroxyl group, halogen atoms, a formyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a halo lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a lower alkanoylamino group, an aroylamino group, and a lower alkylsulfonylamino group, or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s)); Y_{1a} and Y_{2a} are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have a bicyclic or tricyclic fused ring.);

2') may form a five- to six-membered ring selected from a set of groups consisting of:

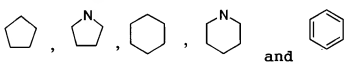

and

together with a carbon atom on said nitrogen-containing

heteroaromatic ring group, on which a substituent selected from a set of groups consisting of a lower alkyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a halo lower alkyl group, a carbamoyl lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylcarbamoyloxy group, a lower alkylamino group, di-lower alkylamino group, an amino lower alkyl group, a lower alkylamino lower alkyl group, di-lower alkylamino lower alkyl group, a lower alkanoylamino group, and an aroylamino group exists, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom, each of which exists in said ring-substituent(s);

or,

3') may form a five- to six-membered ring selected from a set of groups consisting of:

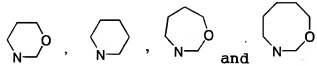


together with a carbon atom on said nitrogen-containing heteroaromatic ring group, on which a substituent represented by the formula Y_{1a}-W_{1a}-Y_{2a}-R_{pa} (wherein: Y_{1a}, W_{1a}, Y_{2a} and R_{pa} have the same meanings as stated above) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom in said ring-substituent(s); X_a and Z_a are each, the same or different, a carbon atom or a nitrogen atom, or optionally being taken together with R_{1a} or R_{2a} and/or R_{3a} on them form a CH or a nitrogen atom; Y_a is a CO, SO or SO_2; R_{1a} is a hydrogen atom

or a substituent represented by a formula Y_{3a}-W_{2a}-Y_{4a}-R_{sa} (wherein: R_{sa} is a hydrogen atom or a lower alkyl group, a lower alkenyl group, a cyclo lower alkyl group, an aryl group, or a heteroaromatic ring group selected from a group consisting of an indolyl group, or an aliphatic heterocyclic group selected from a group of a tetrahydropyridyl group, a piperadinyl group, a piperidinyl group, a pyrrolidinyl group and a morpholino group, all of which groups may be substituted with one to three of the same or different said substituent(s); W_{2a} is a single bond , NR_{ta}, $CH(OR_{ta})$, $CONR_{ta}$, $N(R_{ta})CO$, $N(R_{ta})COO$, $OC(O)NR_{ta}$ or C(O)O (wherein: R_{ta} is a hydrogen atom, a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s)); Y_{3a} and Y_{4a} are each, the same or different, a single bond, or a straight-chain or branched lower alkylene group); or R_1 is a lower alkyl group which may be substituted with one to three substituent(s) selected from both a set of groups consisting of a lower alkyl group, a hydroxyl group, a carbamoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, a lower alkylamino group, a di-lower alkylamino group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a lower alkanoylamino group, and an aroylamino group, and groups

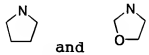
represented by the formula Y_{3a}-W_{2a}-Y_{4a}-R_{sa} (wherein: R_{sa}, W_{2a}, Y_{3a} and Y_{4a} have the same meanings as stated above), or form a nitrogen atom, together with X; R_{2a} and R_{3a} are each independently, the same or different, a hydrogen atom, or a substituent of a hydroxy group, a lower alkyl group, a lower alkoxy group, or the one represented by the formula Y_{3a}-W_{2a}-Y_{4a}-R_{sa} (wherein: R_{sa}, W_{2a}, Y_{3a} and Y_{4a} have the same meanings as stated above), or any one of R_{2a} or R_{3a} forms, together with R_{1a} and X_a, a saturated five- to eight-membered cyclic group selected from a set of groups consisting of (a-1) and (b-1),

(a-1)

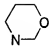


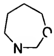
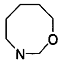
and

(b-1)

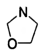


and the other one binds to a carbon atom or a nitrogen atom on the ring, or to a carbon atom, an oxygen atom and/or nitrogen atom on said ring-substituent to form a five- to seven-membered ring, or R_{2a} and R_{3a} are combined to form a spiro cyclo lower alkyl group, or R_{2a} and R_{3a} are combined with Z on which they stand to form an oxo (a keto, or carbonyl) group, or R_{2a} and R_{3a} form, together with Z_a on which they stand, R_{1a} and X_a, a saturated or an unsaturated five- to eight membered cyclic group which may be selected from sets of groups of (a-1) and (a-2):

(a-1)  ,  ,  ,

 and 

and

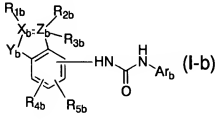
(a-2)  ,  ,  and 

which may have one or more kinds of hetero atom(s), and which may be substituted with one to three of the same or different substituent(s) selected both from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be substituted, a hydroxy group, a hydroxy lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylcarbamoyloxy group, a lower alkylamino group, a di-lower alkylamino group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a lower alkanoylamino group and an aroylamino group, and groups represented by the formula Y_{1a}-W_{1a}-Y_{2a}-R_{pa} (wherein: R_{pa}, W_{1a}, Y_{1a} and Y_{2a} have the same meanings as stated above), and, furthermore, which may be fused with a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a group of a pyridyl group and a pyrazolyl group, and an aliphatic heterocyclic group selected from a group of piperidinyl group and a pyrrolidinyl group; R_{4a} and R_{5a} are each, the same or different, a hydrogen atom or a

substituent consisting of halogen atoms, a hydroxy group, an amino group, or the one represented by the formula Y_{3a}-W_{2a}-Y_{4a}-R_{sa} (wherein: R_{sa}, W_{2a}, Y_{3a} and Y_{4a} have the same meanings as stated above), or a lower alkyl group, an aryl group or an aralkyl group, each of which may be substituted with one to three of the same or different substituent(s) selected from both a set of groups consisting of a lower alkyl group, a hydroxy lower alkyl group, a halo lower alkyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylamino group, a lower alkylamino lower alkyl group, a lower alkanoylamino group, and an aroylamino group, and groups represented by the formula Y_{3a}-W_{2a}-Y_{4a}-R_{sa} (wherein: R_{sa}, W_{2a}, Y_{3a} and Y_{4a} have the same meanings as stated above); and the formula ⎓ is a single bond or a double bond.

3. A compound according to claim 1 and 2, having a structure of Formula (I-b) and pharmaceutically acceptable salts thereof,

Formula (I-b)

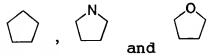


(I-b)

wherein: Ar_b is a nitrogen-containing heteroaromatic ring group selected from a set of groups comprising a pyridyl group and a pyrazolyl group, which:

1'') may be substituted with one to three substituent(s)

selected from both a set of groups consisting of a hydroxy group, halogen atoms, a lower alkanoyloxy group, a hydroxy lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, an amino group, and a lower alkylamino lower alkyl group, and groups represented by a formula Y_{1b}-W_{1b}-Y_{2b}-R_{pb} (wherein: R_{pb} is a hydrogen atom or a lower alkyl group, a lower alkenyl group or a lower alkynyl group which may be substituted with one to three of said substituent(s), or a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of a pyridyl group and a pyrazolyl group, or an aliphatic heterocyclic group selected from a set of groups consisting of isoxazolinyl group, a tetrahydropyridyl group, a piperadinyl group, a piperidinyl group, a pyrrolidinyl group, a morpholino group and a tetrahydroisoquinolinyl group, each of which cyclic substituent groups may be substituted with one to three of said substituent(s) and, furthermore, may have a bicyclic or tricyclic fused ring, which contains the partial structure of which is selected from a group consisting of:

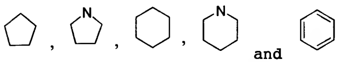


and

; W_{1b} is NR_{qb}, $N(R_{qb})SO_2$, $CONR_{qb}$, $N(R_{qb})CO$, $N(R_{qb})COO$, $OC(O)$, and $C(O)O$ (wherein: R_{qb} and R_{rb} is a hydrogen atom, or a substituent selected from a set of groups consisting of a hydroxy group, halogen atoms, a cyclo lower alkyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, an amino group, and a lower alkylamino lower alkyl group, or a lower

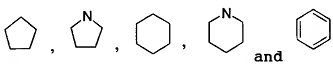
alkyl group, an aryl group or an aralkyl group, which may be substituted with one to three of said substituent(s)); Y_{1b} and Y_{2b} are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have a said bicyclic or tricyclic fused ring);

2'') may have a five- or six-membered ring selected from a group consisting of:



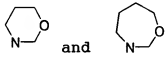
which is together with the ring carbon atom on which a substituent selected from a group consisting of a lower alkanoyloxy group, a hydroxy lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group and a lower alkylamino lower alkyl group stands, a carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom in said ring-substituent; or,

3'') may form a five- or six-membered ring selected from a group consisting of:

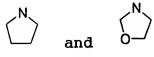


which is together with the ring-carbon atom on which a substituent represented by the formula Y_{1b}-W_{1b}-Y_{2b}-R_{pb} (wherein: Y_{1b}, W_{1b}, Y_{2b} and R_{pb} have the same meanings as stated above) stands, a carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom in said ring-substituent; X_b and Z_b are each, the same or different, a carbon atom or a nitrogen atom, or X_b and Z_b form a CH or a nitrogen atom, being taken together with R_{1b} or R_{2b} and/or R_{3b} on them; Y_b is a CO, SO or SO_2; R_{1b} is a

hydrogen atom or a substituent represented by a formula Y_{3b}-W_{2b}-Y_{4b}-R_{sb} (wherein: R_{sb} is a hydrogen atom or a lower alkyl group, a cyclo lower alkyl group, and an aryl group, which may be substituted with one to three of said substituent(s); W_{2b} is a single bond, $N(R_{tb})COO$ or $C(O)O$ (wherein: R_{tb} is a hydrogen atom or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s)); Y_{3b} and Y_{4b} are each, the same or different, a single bond, or a straight-chain or branched lower alkylene group), or a lower alkyl group which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a hydroxy lower alkyl group and the one represented by the formula Y_{3b}-W_{2b}-Y_{4b}-R_{sb} (wherein: R_{sb}, W_{2b}, Y_{3b} and Y_{4b} have the same meanings as stated above), or forms a nitrogen atom, together with X; R_{2b} and R_{3b} are each independently, the same or different, a hydrogen atom, a hydroxy group, a lower alkyl group, a lower alkoxy group, or a substituent represented by the formula Y_{3b}-W_{2b}-Y_{4b}-R_{sb} (wherein: R_{sb}, W_{2b}, Y_{3b} and Y_{4b} have the same meanings as stated above), or either R_{2b} or R_{3b} forms, together with R_{1b} and X_b, a saturated five- to eight-membered cyclic group selected from sets of groups of (b-1) and (b-2),

(b-1)  and

and

(b-2)  and

and the other one binds to a carbon atom or a nitrogen atom

on the ring, or to a carbon atom, an oxygen atom and/or nitrogen atom on said ring-substituent to form a five- to seven-membered ring, or R_{2b} and R_{3b} are combined to form a spiro cyclo lower alkyl group, or they (R_{2b} and R_{3b}) are combined furthermore with Z on which they stand to form an oxo (a keto, or carbonyl) group, or they (R_{2b} and R_{3b}) form, together with Z_b on which they stand, R_{1b} and X_b, a saturated or an unsaturated five- to seven-membered cyclic group which may be selected from sets of groups of (b-1) and (b-2):

(b-1)  and 

and

(b-2)  ,  ,  and 

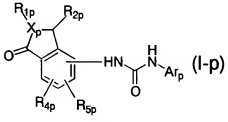
which may either have one or more kinds of hetero atom(s) selected from a group of a nitrogen atom, an oxygen atom and a sulfur atom, or which may be fused with a cyclo lower alkyl group, an aryl group and an aliphatic heterocyclic group selected from a group of a piperidinyl group and a pyrrolidinyl group, all of which cyclic groups may be substituted with one to three of the same or different substituent(s) selected both from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be substituted, a hydroxy lower alkyl group and a lower alkoxycarbonyl group, and groups represented by the formula Y_{1b}-W_{1b}-Y_{2b}-R_{pb} (wherein: R_{pb}, W_{1b}, Y_{1b} and Y_{2b} have the same meanings as stated above);

R_{4b} and R_{5b} are each independently, the same or different,

or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of substituents comprising any of a hydrogen atom, halogen atoms or a substituent represented by the formula Y_{3b}-W_{2b}-Y_{4b}-R_{5b} (wherein: R_{5b}, W_{2b}, Y_{3b} and Y_{4b} have the same meanings as stated above), or a substituent selected from a set of groups consisting of a lower alkyl group, a hydroxy lower alkyl group, a halo lower alkyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a lower alkylamino group, a lower alkylamino lower alkyl group, a lower alkanoylamino group, and an aroylamino group,; and the formula ═══ means a single bond or a double bond.

4. A compound according to any one of claim 1 to claim 3, having a structure of Formula (I-p) and pharmaceutically acceptable salts thereof,

Formula (I-p)



(I-p)

wherein: Ar_p is a nitrogen-containing heteroaromatic ring group which may be substituted, X_p is a carbon atom (CH) or a nitrogen atom, R_{1p} is a hydrogen atom or a lower alkyl group which may be substituted, R_{2p} is a hydrogen or an oxo group (which forms carbonyl group, together with the carbon

atom on which it stands), or forms, together with the carbon atom on which it stands, R_{1p} and X_p, a saturated or an unsaturated five- or six-membered cyclic group which may have one or more kinds of hetero atom(s) selected from a group of a nitrogen atom and a sulfur atom or which may be substituted; R_{4p} and R_{5p} are each, the same of different, any of a hydrogen atom, halogen atoms, a hydroxy group, an amino group or a lower alkyl group, an aryl group or an aralkyl group which may be substituted.

5. A compound according to claim 1, wherein the compound is N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-octylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-methyl-4,4-dimethylpentylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(5-methoxyindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-methylindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(5-chloroindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(6-methylpyridin-2-yl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(pyrrolidin-2-yl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(t-butylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(pyrazolo[5,4-b]pyridin-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(1-hydroxymethylcyclopentylaminomethyl)pyrazol-3-yl)urea,

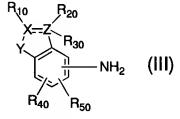
N'-(pyrrolidino[2,1-b]-4-oxoisoindolin-8-yl)-N-(5-(N-t-butyl-N-methyl-aminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-1,2,5,6-tetrahydropyridin-4-yl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-4-piperidyl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-1,2,5,6-tetrahydropyridin-3-yl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-3-piperidyl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]-4-oxoisoindolin-8-yl)-N-(4-(1,2,5,6-tetrahydropyridin-3-yl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-acetyl-3-piperidyl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(piperidino[3,4-c]pyridin-5-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(pyrrolidino[3,4-c]pyridin-5-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(cyclohexylaminoethyl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-cyclohexylpyrrolidin-3-yl)pyridin-2-yl)urea (compound 180), N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzylpyrrolidin-3-yl)pyridin-2-yl)urea, N'-(N-cyclopentyl-3-methylisoindolin-1-on-4-yl)-N-(pyridin-2-yl)urea, N'-(3-t-butylisoindolino[3,2-b]oxazolidin-4-on-8-yl)-N-(4-(N-benzylpyrrolidin-3-yl)pyridin-2-yl)urea, N'-(2-methylisoindolino[3,2-b]perhydro-1,3-oxazin-5-on-9-yl)-N-(4-(N-benzylpyrrolidin-3-yl)pyridin-2-yl)urea, or N'-(isoindolino[2,3-b]perhydro-1,4-methano-6,11a-benzoxazin-11-on-7-yl)-N-(pyridin-2-yl)urea.

6. A compound according to claim 1, wherein the compound is N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-octylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-methyl-4,4-dimethylpentylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(5-methoxyindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(2-methylindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(5-(5-chloroindan-2-ylaminomethyl)pyrazol-3-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-1,2,5,6-tetrahydropyridin-4-yl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzyl-4-piperidyl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(piperidino[3,4-c]pyridin-6-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-cyclohexylpyrrolidin-3-yl)pyridin-2-yl)urea, N'-(pyrrolidino[2,1-b]isoindolin-4-on-8-yl)-N-(4-(N-benzylpyrrolidin-3-yl)pyridin-2-yl)urea, N'-(3-t-butylisoindolino[3,2-b]oxazolidin-4-on-8-yl)-N-(4-(N-

benzylpyrrolidin-3-yl)pyridin-2-yl)urea, N'-(2-methylisoindolino[3,2-b]perhydro-1,3-oxazin-5-on-9-yl)-N-(4-(N-benzylpyrrolidin-3-yl)pyridin-2-yl)urea, or N'-(isoindolino[2,3-b]perhydro-1,4-methano-6,11a-benzoxazin-11-on-7-yl)-N-(pyridin-2-yl)urea.

7. A method of manufacturing a compouns of Formula (I) and pharmaceutically acceptable salts thereof characterized by reacting compounds of Formula (III) with a compound of Formula (IV):

Formula (III)



(III)

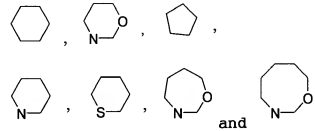
wherein: X and Z are each, the same or different, a carbon atom or a nitrogen atom, or a CH or a nitrogen atom, together with R_{10} or R_{20} and/or R_{30} which bind to X or Z; Y is a CO, SO or SO_2; R_{10} is a hydrogen atom or a substituent represented by a formula Y_{30}-W_{20}-Y_{40}-R_{80} (wherein: R_{80} is a hydrogen atom or a lower alkyl group, a lower alkenyl group, a lower alkynyl group, a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an

isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group which may be substituted with one to three of said substituents; W_{20} is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_{t0}, SO_2NR_{t0}, $N(R_{t0})SO_2NR_{u0}$, $N(R_{t0})SO_2$, $CH(OR_{t0})$, $CONR_{t0}$, $N(R_{t0})CO$, $N(R_{t0})CONR_{u0}$, $N(R_{t0})COO$, $N(R_{t0})CSO$, $N(R_{t0})COS$, $C(R_{v0})=CR_{r0}$, $C \equiv C$, CO, CS, OC(O), $OC(O)NR_{t0}$, $OC(S)NR_{t0}$, SC(O), $SC(O)NR_{t0}$ and C(O)O (wherein: $R_{t0}$and R_{u0} are each a hydrogen atom or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group which may be protected, a cyano group, halogen atoms, a nitro

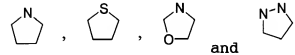
group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group which may be protected, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be protected, and a lower alkoxyimino group, or said substituent(s)); Y_{30} and Y_{40} are each, the same or different, a single bond or a straight-chain or branched lower alkylene group); or a lower alkyl group which may be substituted with one to three of substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group which may be protected, a cyano group, halogen atoms, a nitro group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower

alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be protected, and a lower alkoxyimino group, or a (set of substituents) substituent represented by the formula Y_{30}-W_{20}-Y_{40}-R_{s0} (wherein: R_{s0}, W_{20}, Y_{30} and Y_{40} have the same meanings as stated above), or R_{10} forms a nitrogen atom, together with X; R_{20} and R_{30} are each independently, the same or different, any of a hydrogen atom, a hydroxy group which may be protected, a lower alkyl group, a lower alkoxy group, or a substituent represented by the formula Y_{30}-W_{20}-Y_{40}-R_{s0} (wherein: R_{s0}, W_{20}, Y_{30} and Y_{40} have the same meanings as stated above), or either one of R_{20} and R_{30} forms, together with R_{10} and X, a saturated five- to eight-

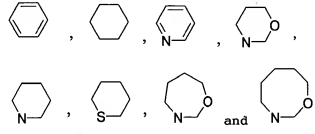
membered cyclic group selected from a sets of groups consisting of (a) and (b):

(a)  and

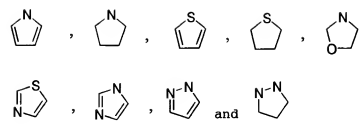
and

(b)  and

and the other one binds either to a carbon atom or a nitrogen atom on the ring, or to a carbon atom, an oxygen atom and/or a nitrogen atom on the ring-substituent(s) on said ring, to form a five- to seven-membered ring, or R_{20} and R_{30} are combined to form a spiro cyclo alkyl group, or to form, together with Z, on which they stand, an oxo (keto, carbonyl) group, or, to form, together with Z on which they stand, R_{10} and X, a heteroaromatic ring consisting of a saturated or an unsaturated five- to eight-membered cyclic ring selected from sets of groups consisting of (a) and (b)

(a)  and

and

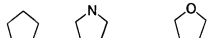
(b) 

,which may either contain one or more kinds of hetero atoms selected from the group consisting of a nitrogen atom, an oxygen atom and a sulfur atom, or which may be fused with a ring selected from a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a

tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, which may be substituted with one to three of the same or different substituent(s), selected from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be substituted, a hydroxyl group which may be protected, a cyano group, halogen atoms, a nitro group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group which may be substituted, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be

protected, and a lower alkoxyimino group, or a set of substituent(s) represented by a formula Y_{10}-W_{10}-Y_{20}-R_{p0} (wherein: R_{p0} is a hydrogen atom, or a lower alkyl group, a lower alkenyl group, or a lower alkynyl group, which may be substituted with one to three of said substituent(s), or a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, which may be substituted

with one to three of said substituent(s), or, furthermore, may have on it a bicyclic or tricyclic fused ring which contains a partial structure selected from a set of groups comprising:



and

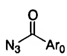
; W_{10} is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_{q0}, SO_2NR_{q0}, $N(R_{q0})SO_2NR_{r0}$, $N(R_{q0})SO_2$, $CH(OR_{q0})$, $CONR_{q0}$, $N(R_{q0})CO$, $N(R_{q0})CONR_{q0}$, $N(R_{q0})COO$, $N(R_{q0})CSO$, $N(R_{q0})COS$, $C(R_{q0})=CR_{r0}$, C≡C, CO, CS, OC(O), $OC(O)NR_{q0}$, $OC(S)NR_{q0}$, SC(O), $SC(O)NR_{q0}$ and C(O)O (wherein: R_{q0} and R_{r0} are each either a hydrogen atom or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of substitutent(s) selected from a set of groups consisting of a lower alkyl group, a cyclo lower alkyl group, a hydroxyl group which may be protected, a cyano group, halogen atoms, a nitro group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower

alkylammonio group, an amino lower alkyl group which may be protected, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be protected, and a lower alkoxyimino group, or from said substituent(s)); Y_{10} and Y_{20} are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have a bicyclic or tricyclic fused ring); R_{40} and R_{50} are each, the same or different, either a hydrogen atom, halogen atoms, a hydroxyl which may be protected, an amino group which may be protected, or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of the same or different substituents selected from a set of the groups consisting of: the one represented by the formula Y_{30}-W_{20}-Y_{40}-R_{50} (wherein: R_{50}, W_{20}, Y_{30} and Y_{40} have the same meanings as stated above), the one which may be selected from a set of groups consisting of a lower alkyl group, a cyano group, a nitro group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino

lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group which may be protected, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be protected, and a lower alkoxyimino group, and the one represented by the formula Y_{30}-W_{20}-Y_{40}-R_{s0} (wherein: R_{s0}, W_{20}, Y_{30} and Y_{40} have the same meanings as stated above); the Formula ⎓ is a single bond or a double bond, or

is made to react with a compound represented by Formula (IV)

Formula (IV)

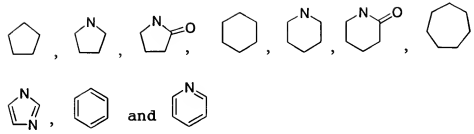


(IV)

wherein: Ar_0 is a nitrogen-containing heteroaromatic ring group selected from a set of groups consisting of a pyridyl group, a pyrimidinyl group, a pyradinyl group, a pyridazinyl group, a thiazolyl group, an isothiazolyl group, an oxazolyl group, an isoxazolyl group, a pyrazolyl group, a pyrrolyl group, an imidazolyl group, an indolyl group, an isoindolyl group, a quinolyl group, an isoquinolyl group, a benzothiazolyl group, a benzoxazolyl group, which:

1) may be substituted with one to three of the same or different substituent(s) selected from a set of groups a lower alkyl group, a hydroxyl group which may be protected, a cyano group, halogen atoms, a nitro group, a carboxyl group which may be protected, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group which may be protected, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group which may be protected and a lower alkoxyimino group, or a substituent selected from groups represented by a formula Y_{10}-W_{10}-Y_{20}-R_{p0} (wherein: R_{p0}, W_{10}, Y_{10} and Y_{20} have the same meanings as stated above); or

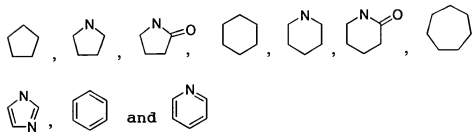
2) may have a five- to seven-membered ring selected from a set of groups consisting of



,which may be protected, and together with the carbon atom on the ring on which the substituent selected from a set of groups consisting of a lower alkyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group which may be protected, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group which may be protected, a carbamoyl lower alkyl group, a lower alkoxy group, a lower alkoxycarbonyl group, a lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, a di-lower alkylcarbamoyloxy group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group which may be protected, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkylfulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group and a lower alkanoylamidino lower alkyl group (hereinafter indecated as ring-substituent(s) which may be protected) stands, a carbon atom next to said carbon atom and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent(s) which may be protected, all taken together;

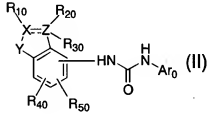
or

3) may have a five- to seven-membered ring selected from a set of groups consisting of

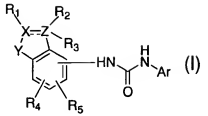


, which may be protected, and together with the carbon atom on the ring on which a substituent selected from groups represented by the formula of Y_{10}-W_{10}-Y_{20}-R_{p0} (wherein: Y_{10}, W_{10}, Y_{20} and R_{p0} have the same meanings as stated above) stands, a carbon atom next to said carbon atom and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent(s) which may be protected, all taken together, to give a compound of Formula (II)

Formula (II)



, wherein Ar_0, X, Y, Z, R_{10}, R_{20}, R_{30}, R_{40} and the Formula ═══ have the same meanings as stated above, and then, if necessary, removing the protecting group(s), to give a compound of Formula (I) according to claim 1 and pharmaceutically acceptable salts thereof:



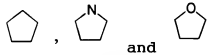
(I)

, wherein: Ar is a nitrogen-containing heteroaromatic ring group selected from the groups consisting of a pyridyl group, a pyrimidinyl group, a pyradinyl group, a pyridazinyl group, a thiazolyl group, an isothiazolyl group, an oxazolyl group, an isoxazolyl group, a pyrazolyl group, a pyrrolyl group, an imidazolyl group, an indolyl group, an isoindolyl group, a quinolyl group, an isoquinolyl group, a benzothiazolyl group, and a benzoxazolyl group, and said nitrogen-containing heteroaromatic ring group, which:

1) may be optionaly substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a

di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or groups represented by a formula Y_1-W_1-Y_2-R_p (wherein: R_p is any of a hydrogen atom, or a lower alkyl group, a lower alkenyl group or a lower alkynyl group which may be substituted with one to three of said substituents, or a cyclo lower alkyl group, an aryl group, or a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a

tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, each of which(heteroaromatic ring groups and aliphatic heterocyclic groups) may be substituted with one to three of the same or different said substituent(s), which are same or different, or furthermore, may have (on it) a bicyclic or tricyclic fused ring of a partial structure selected from a set of groups consisting of:

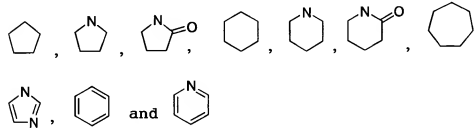


and

; W_1 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_q, SO_2NR_q, $N(R_q)SO_2NR_r$, $N(R_q)SO_2$, $CH(OR_q)$, $CONR_q$, $N(R_q)CO$, $N(R_q)CONR_r$, $N(R_q)COO$, $N(R_q)CSO$, $N(R_q)COS$, $C(R_q)=CR_r$, $C\equiv C$, CO, CS, OC(O), $OC(O)NR_q$, $OC(S)NR_q$, SC(O), $SC(O)NR_q$ and C(O)O (wherein: R_q and R_r are each, a hydrogen atom or a lower alkyl group, an aryl group or an aralkyl group, which may be substituted with one to three substituent(s) selected from a set of groups consisting of a lower alkyl group, a cyclo lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower

alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s).); Y_1 and Y_2 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have a said bicyclic or tricyclic fused ring);

2) may have a five- to seven-membered fused ring selected from a set of groups consisting of:



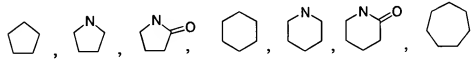
and

which may be together with the carbon atom of said nitrogen-containing heteroaromatic cyclic group, on which the substituent, which is selected from a set of groups consisting of consisting of a lower alkyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl

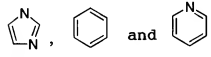
group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, and a lower alkanoylamidino lower alkyl group (hereinafter indicated as ring-substituent) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent;

or,

3) may form a five- to seven-membered ring selected from a set of groups consisting of:



and



which may be formed from the carbon atom on which a substituent represented by the formula Y_1-W_1-Y_2-R_p (wherein: Y_1, W_1, Y_2 and R_p have the same meanings as stated above) stands, the carbon atom next to said carbon atom, and a

carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent; X and Z are each, the same or different, a carbon atom or a nitrogen atom, or being taken together with R_1 or R_2 and/or R_3 which may exist on X and Z, forms a CH or a nitrogen atom; Y is CO, SO or SO_2;

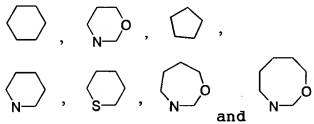
R_1 is any of a hydrogen atom or a substituent represented by a formula Y_3-W_2-Y_4-R_8 (wherein: R_8 is any of a hydrogen atom or a lower alkyl group, a lower alkenyl group, a lower alkynyl group, a cyclo lower alkyl group, an aryl group, and a heteroaromatic ring group which is selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl

group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, all of which may be substituted with one to three of said substituent(s); W_2 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_t, SO_2NR_t, $N(R_t)SO_2NR_u$, $N(R_t)SO_2$, $CH(OR_t)$, $CONR_t$, $N(R_t)CO$, $N(R_t)CONR_u$, $N(R_t)COO$, $N(R_t)CSO$, $N(R_t)COS$, $C(R_v)=CR_z$, $C\equiv C$, CO, CS, OC(O), $OC(O)NR_t$, $OC(S)NR_t$, SC(O), $SC(O)NR_t$ and C(O)O (wherein: R_t and R_u are each a hydrogen atom or a substituent selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a lower alkyl group,

an aryl group or an aralkyl group which may be substituted with one to three of said substituent(s)); Y_3 and Y_4 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group), or R_1 is a lower alkyl group which may be substituted with one to three of the same or different substituent(s) which is selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a substituent or substituents selected from groups represented by the formula Y_3-W_2-Y_4-R_8 (wherein: R_8, W_2, Y_3 and Y_4 have the same meanings as stated

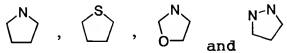
above), or R_1 forms a nitrogen atom together with X.); R_2 and R_3 are each independently, the same or different, a hydrogen atom, a hydroxy group, a lower alkyl group, a lower alkoxy group, or a substituent represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or either one of R_2 or R_3 forms, together with R_1 and X, a saturated five- to eight-membered cyclic group selected from sets of groups of (a) and (b):

(a)

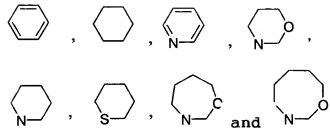


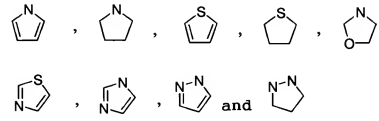
and

(b)



and the another one of R_2 or R_3 binds to a carbon atom or a nitrogen atom on the ring, or to a carbon atom, an oxygen atom and/or nitrogen atom on said ring-substituent to form a five- to seven-membered ring, or R_2 and R_3 are combined to form a spiro cyclo lower alkyl group, or are together furthermore with Z to which they bind to form an oxo (keto, or carbonyl) group, or they (R_2 and R_3) form, together with Z, R_1 and X, on which they stand, a saturated or an unsaturated five- to eight membered cyclic group which may be selected from sets of groups of (a) and (b):

(a) 

(b) 

,which may contain one or more kinds of hetero atom(s) selected from a group of a nitrogen atom, an oxygen atom and a sulfur atom, or which may be fused with any of a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group,

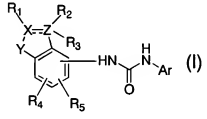
a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be substituted, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl

group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and a substituent or substituents selected from groups represented by the formula Y_1-W_1-Y_2-R_p (wherein: R_p, W_1, Y_1 and Y_2 have the same meanings as stated above); R_4 and R_5 are each, the same or different, a hydrogen atom, halogen atoms, a hydroxy group, an amino group, or a substituent represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or any of a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of the same or different substituent(s) selected from both a set of groups consisting of a lower alkyl group, a cyano group, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl

group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and groups represented by the formula Y_3-W_2-Y_4-R_8 (wherein: R_8, W_2, Y_3 and Y_4 have the same meanings as stated above); and the formula --- represents either a single bond or a double bond.

8. A method of preparing a compound of Formula (I) or pharmaceutically acceptable salts thereof:

Formula (I)

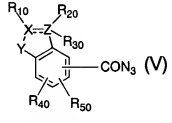


(I)

, wherein: Ar, X, Y, Z, R_1, R_2, R_3, R_4, R_5 and the formula --- have the same meanings as stated above,

characterized by reacting a compound represented by Formula (V):

Formula (V)



(V)

, wherein: X, Y, Z, R_{10}, R_{20}, R_{30}, R_{40}, R_{50} and the formula --- have the same meanings as stated above,

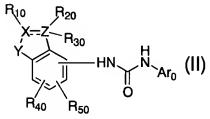
with a compound represented with Formula (VI):

Formula (VI)

(VI)

, wherein: Ar_0 have the same meanings as stated above, to give a compound of Formula (II):

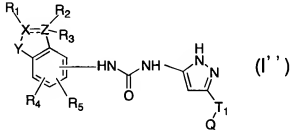
Formula (II)



, wherein: Ar_0, X, Y, Z, R_{10}, R_{20}, R_{30}, R_{40}, R_{50} and the formula ⁼⁼⁼ have the same meanings as stated above , and then, by removing, if necessary, the protective group(s).

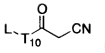
9. A method for preparing a compound of Formula (I'')

Formula (I'')



, wherein: T_1 is any of a single bond or a straight-chain or branched lower alkylene, an aryl group, a heteroromatic ring group, an aliphatic heterocyclic group, and an Ar which has a convertible functional group(s)including or an aralkyl group; Q is W_1-Y_2-R_p (wherein: W_1, Y_2 and R_p have the same meanings as stated above), X, Y, Z, R_1, R_2, R_3, R_4, R_5 and the formula ⁼⁼⁼ have the same meanings as stated above, and salts thereof characterized by first making a compound of a formula (VII):

Formula (VII)



(VII)

, wherein: L is a reactive substituent which may be protected, and may have a functional group which can be converted into other functional group, T_{10} is any of a single bond or , if appropriate, a straight-chain or branched lower alkylene group which may have a protected substituent(s), an aryl group, a heteroaromatic ring group, an aliphatic heterocyclic group, and an Ar_0 which has a convertible functional group including an aralkyl group, reacting with a compound of a formula (VIII):

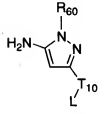
Formula (VIII)

$$H_2N-NH-R_{60} \qquad (VIII)$$

, wherein: R_{60} is a hydrogen atom or a protective group for an amino group,

to obtain a compound of a formula (IX):

Formula (IX)

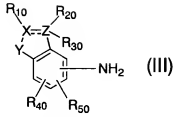


(IX)

, wherein: T_{10}, R_{60} and L have the same meanings as stated above,

and then by making said compound react with a compound of a Formula (III):

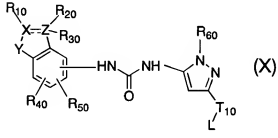
Formula (III)



(III)

, wherein: X, Y, Z, R_{10}, R_{20}, R_{30}, R_{40}, R_{50} and the formula --- have the same meanings as stated above] and one of reactive derivatives of formate ester, if necessary, in the presence of a base ro give a compound of a formula (X):

Formula (X)



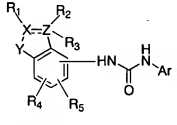
(X)

, wherein: X, Y, Z, T_{10}, R_{10}, R_{20}, R_{30}, R_{40}, R_{50}, R_{60} and the formula = have the same meanings as stated above,

and by subjecting the compound obtained to transformation reaction of the substituent L and/or removal of the protective group.

10. A Cdk4 and/or Cdk6 inhibitory drug containing as the active ingredient a compound of Formula (I) and pharmaceutically acceptable salts thereof:

Formula (I)



(I)

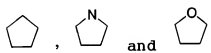
,wherein: Ar is a nitrogen-containing heteroaromatic ring

group selected from a set of groups consisting of a pyridyl group, a pyrimidinyl group, a pyradinyl group, a pyridazinyl group, a thiazolyl group, an isothiazolyl group, an oxazolyl group, an isoxazolyl group, a pyrazolyl group, a pyrrolyl group, an imidazolyl group, an indolyl group, an isoindolyl group, a quinolyl group, an isoquinolyl group, a benzothiazolyl group, and a benzoxazolyl group, which:

1) may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and groups represented

by a formula Y_1-W_1-Y_2-R_p (wherein: R_p is any of a hydrogen atom, or a lower alkyl group, a lower alkenyl group or a lower alkynyl group which may be substituted with one to three of said substituents, or a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, each of which cyclic group may be substituted with one to three of said substituents or, furthermore, may have (on it) a bicyclic or tricyclic

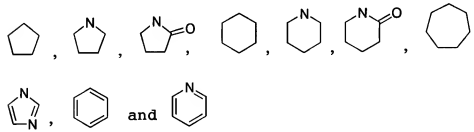
fused ring of a partial structure selected from a set of groups consisting of:



; W_1 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_q, SO_2NR_q, $N(R_q)SO_2NR_r$, $N(R_q)SO_2$, $CH(OR_q)$, $CONR_q$, $N(R_q)CO$, $N(R_q)CONR_r$, $N(R_q)COO$, $N(R_q)CSO$, $N(R_q)COS$, $C(R_q)=CR_r$, C≡C, CO, CS, OC(O), $OC(O)NR_q$, $OC(S)NR_q$, SC(O), $SC(O)NR_q$ and C(O)O (wherein: R_q and R_r are each a hydrogen atom or a lower alkyl group, an aryl group or an aralkyl group, which may be substituted with one to three substituent(s) selected from a set of groups consisting of a lower alkyl group, a cyclo lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl

group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and which may have one to three said substituent or substituents.); Y_1 and Y_2 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group which may have a said bicyclic or tricyclic fused ring);

2) may have a five- to seven-membered fused ring selected from a set of groups consisting of:



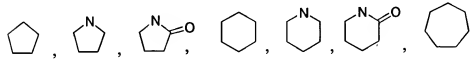
and

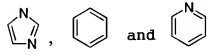
which may be together with the carbon atom of said nitrogen-containing heteroaromatic ring group, on which the substituent, which is selected from a set of groups consisting of consisting of a lower alkyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl

group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, and a lower alkanoylamidino lower alkyl group (hereinafter indicated as ring-substituent) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent;

or,

3) may form a five- to seven-membered ring selected from a set of groups consisting of:





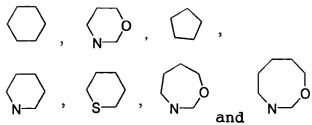
which may formed from the carbon atom on which a substituent represented by the formula Y_1-W_1-Y_2-R_p (wherein: Y_1, W_1, Y_2 and R_p have the same meanings as stated above) stands, the carbon atom next to said carbon atom, and a carbon atom, an oxygen atom and/or a nitrogen atom on said ring-substituent.

; X and Z are each, the same or different, a carbon atom or a nitrogen atom, or being taken together with R_1 or R_2 and/or R_3 which may exist on X or Z, forms a CH or a nitrogen atom; Y is CO, SO or SO_2; R_1 is any of a hydrogen atom or a substituent represented by a formula Y_3-W_2-Y_4-R_s (wherein: R_s is a hydrogen atom or a lower alkyl group, a lower alkenyl group, a lower alkynyl group, a cyclo lower

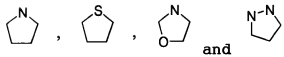
alkyl group, an aryl group, and a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolizinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group (which is) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, all of which may be substituted with one to three of said substituent(s); W_2 is a single bond, an oxygen atom, a sulfur atom, SO, SO_2, NR_t, SO_2NR_t, $N(R_t)SO_2NR_u$, $N(R_t)SO_2$, $CH(OR_t)$, $CONR_t$, $N(R_t)CO$, $N(R_t)CONR_u$, $N(R_t)COO$, $N(R_t)CSO$, $N(R_t)COS$, $C(R_v)=CR_r$, $C\equiv C$, CO, CS, OC(O), $OC(O)NR_t$, $OC(S)NR_t$, SC(O), $SC(O)NR_t$ and C(O)O (wherein: R_t and R_u are each a

hydrogen atom or a substituent selected from a set of groups consisting of a lower alkyl group, a hydroxy group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of said substituent or substituents); Y_3 and Y_4 are each, the same or different, a single bond or a straight-chain or branched lower alkylene group, or R_1 is an lower alkyl group which may be substituted with one to three of the same or different substituent or substituents selected from a set of groups consisting of a lower alkyl group, a hydroxyl group, a cyano group, halogen atoms, a

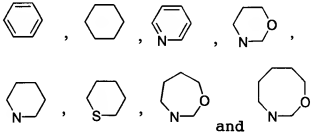
nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and a substituent selected from groups represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or R_1 forms a nitrogen atom together with X; R_2 and R_3 are each independently, the same or different, a hydrogen atom, a hydroxy group, a lower alkyl group, a lower alkoxy group, or a substituent represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or either one of R_2 or R_3 forms, together with R_1 and X, a saturated five- to eight-membered cyclic group selected from sets of groups of (a) and (b):

(a)  and

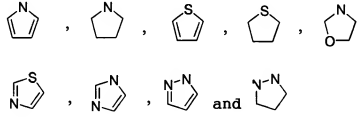
and

(b)  and

and the other one of R_2 or R_3 binds to a carbon atom or a nitrogen atom on the ring, or to a carbon atom, an oxygen atom and/or nitrogen atom on said ring-substituent to form a five- to seven-membered ring, or R_2 and R_3 are combined to form a spiro cyclo lower alkyl group, or R_2 and R_3 are conbined furthermore with Z on which they exist to form an oxo (keto, or carbonyl) group, or they (R_2 and R_3) form, together with Z, R_1 and X on which they stand, a saturated or an unsaturated five- to eight-membered cyclic group which may be selected from sets of groups of (a) and (b):

(a)  and

and

(b) 

which may contain one or more kinds of hetero atom(s)

selected from a group of a nitrogen atom, an oxygen atom and a sulfur atom, or which may be fused with any of a cyclo lower alkyl group, an aryl group, a heteroaromatic ring group selected from a set of groups consisting of an imidazolyl group, an isoxazolyl group, an isoquinolyl group, an isoindolyl group, an indazolyl group, an indolyl group, an indolydinyl group, an isothiazolyl group, an ethylenedioxyphenyl group, an oxazolyl group, a pyridyl group, a pyradinyl group, a pyrimidinyl group, a pyridazinyl group, a pyrazolyl group, a quinoxalinyl group, a quinolyl group, a dihydroisoindolyl group, a dihydroindolyl group, a thionaphthenyl group, a naphthyridinyl group, a phenazinyl group, a benzoimidazolyl group, a benzoxazolyl group, a benzothiazolyl group, a benzotriazolyl group, a benzofuranyl group, a thiazolyl group, a thiadiazolyl group, a thienyl group, a pyrrolyl group, a furyl group, a furazanyl group, a triazolyl group, a benzodioxanyl group and a methylenedioxyphenyl group, or an aliphatic heterocyclic group(s) selected from a set of groups consisting of an isoxazolinyl group, an isoxazolidinyl group, a tetrahydropyridyl group, an imidazolidinyl group, a tetrahydrofuranyl group, a tetrahydropyranyl group, a piperazinyl group, a piperidinyl group, a pyrrolidinyl group, pyrrolinyl group, a morpholino group, a tetrahydroquinolinyl group and a tetrahydroisoquinolinyl group, which may be substituted with one to three of the same or different substituent(s) selected from a set of groups consisting of a lower alkyl group, a spiro cyclo lower alkyl group which may be

substituted, a hydroxyl group, a cyano group, halogen atoms, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, and a substituent selected from groups represented by the formula Y_1-W_1-Y_2-R_p (wherein: R_p, W_1, Y_1 and Y_2 have the same meanings as stated above); R_4 and R_5 are each, the same or different, a hydrogen atom, halogen atoms, a hydroxy group, an amino group, or a substituent represented by the formula Y_3-W_2-Y_4-R_s (wherein: R_s, W_2, Y_3 and Y_4 have the same meanings as stated above), or any of a lower alkyl group, an aryl group or an aralkyl group which may be substituted with one to three of the same of different substituent or substituents selected from both a

set of groups consisting of a lower alkyl group, a cyano group, a nitro group, a carboxyl group, a carbamoyl group, a formyl group, a lower alkanoyl group, a lower alkanoyloxy group, a hydroxy lower alkyl group, a cyano lower alkyl group, a halo lower alkyl group, a carboxy lower alkyl group, a carbamoyl lower alkyl group, lower alkoxy group, a lower alkoxycarbonyl group, lower alkoxycarbonylamino group, a lower alkoxycarbonylamino lower alkyl group, a lower alkylcarbamoyl group, a di-lower alkylcarbamoyl group, a carbamoyloxy group, a lower alkylcarbamoyloxy group, di-lower alkylcarbamoyloxy group, an amino group, a lower alkylamino group, a di-lower alkylamino group, a tri-lower alkylammonio group, an amino lower alkyl group, a lower alkylamino lower alkyl group, a di-lower alkylamino lower alkyl group, a tri-lower alkylammonio lower alkyl group, a lower alkanoylamino group, an aroylamino group, a lower alkanoylamidino lower alkyl group, a lower alkylsulfinyl group, a lower alkylsulfonyl group, a lower alkylsulfonylamino group, a hydroxyimino group and a lower alkoxyimino group, or groups represented by the formula Y_3-W_2-Y_4-R_8 (wherein: R_8, W_2, Y_3 and Y_4 have the same meanings as stated above); and the formula ⎓ represents either a single bond or a double bond.